

WHAT IS CLAIMED:

- 1 1. A catheter comprising:
2 a catheter body, wherein the catheter body is elongated and hollow, and
3 at least one collapsible lumen having a proximal and distal end, wherein
4 the proximal end is coupled to the catheter body.
- 1 2. The catheter of claim 1 wherein the lumen is adaptable to be collapsed
2 inside the catheter body.)
- 1 3. The catheter of claim 1 further comprising a nozzle on the distal end of
2 the collapsible lumen wherein the nozzle has a plurality of openings disposed
3 around a periphery of the collapsible lumen.
- 1 4. The catheter of claim 1 further comprising an opening located on the
2 distal end of the nozzle.
- 1 5. The catheter of claim 1 wherein the plurality of openings are proximate
2 to the distal end of the collapsible lumen.

1 6. The catheter of claim 1 wherein the plurality of openings are disposed
2 around the periphery of the collapsible lumen from the distal end of the
3 collapsible lumen to the proximal end of the collapsible lumen.

1 7. The catheter of claim 1 wherein the nozzle is tapered.

1 8. The catheter of claim 1 wherein the openings are slits.

1 9. The catheter of claim 8 wherein the slits are V-shaped.

1 10. The catheter of claim 1 wherein the catheter body comprises:
2 a support member with a proximal and distal end, and
3 a rigid member with a proximal and distal end wherein the proximal end
4 of the support member is coupled to the distal end of the rigid member.

1 11. The catheter of claim 10 wherein the support member comprises a tubular
2 member and a coil, and the coil is disposed within the tubular member.

1 12. The catheter of claim 1 further comprising an inflatable balloon member
2 disposed about the catheter body.

1 13. The catheter of claim 1 further comprising a tube within the catheter
2 body and coupled to the inflatable balloon member for coupling the inflatable
3 balloon member to a pressure source.

1 14. The catheter of claim 1 further comprising a dilator with an outside
2 diameter smaller than the insider diameter of the collapsible lumen and
3 catheter body such that the dilator can be slidably positioned inside the
4 collapsible lumen and the catheter body.

1 15. The catheter of claim 1 further comprising a metal tube coupled to the
2 distal end of the collapsible lumen wherein the metal tube runs substantially
3 coaxially through the length of the collapsible lumen.

1 16. The catheter of claim 15 further comprising a tip portion coupled to the
2 distal end of metal tube.

1 17. The catheter of claim 14 further comprising a sheath disposed around the
2 collapsible lumen.

1 18. The catheter of claim 17 wherein the sheath has at least one longitudinal
2 detent recess.

1 19. A device for diffusing the flow of fluids from a medical catheter
2 comprising a longitudinal expandable lumen.

1 20. The device of claim 19 wherein the lumen is adaptable to be collapsed
2 inside a catheter body.

1 21. The device of claim 19 further comprising a nozzle on the distal end of
2 the collapsible lumen wherein the nozzle has a plurality of openings disposed
3 around the periphery of the collapsible lumen.

1 22. The device of claim 19 further comprising an opening located on the distal
2 end of the nozzle.

1 23. The device of claim 19 wherein the plurality of openings are proximate
2 to the distal end of the collapsible lumen.

1 24. The device of claim 19 wherein the plurality of openings are disposed
2 around the periphery of the collapsible lumen along the length of the collapsible
3 lumen.

1 25. The device of claim 19 wherein the nozzle is tapered.

1 26. The device of claim 19 wherein the openings are slits.

1 27. The device of claim 26 wherein the slits are V-shaped.

1 28. A method of manipulating a catheter within a longitudinal body vessel,
2 comprising:

3 a. inserting the catheter into the body vessel wherein the catheter is
4 coupled to a collapsible lumen,

5 b. positioning the catheter within a body vessel, and

6 c. expanding the collapsible lumen in a longitudinal direction.

1 29. The method of claim 28 wherein the expanding step further comprises:

2 a. connecting the catheter to a source of fluid flow.

3 b. creating a fluid flow pressure within the catheter in order to
4 expand the collapsible lumen.

- 1 30. The method of claim 28 wherein the expanding step further comprises:
- 2 a. inserting a dilator into the support member;
- 3 b. pushing the dilator through the supporting member until the
- 4 dilator connects with the collapsible lumen,
- 5 c. extending the collapsible lumen by pushing the dilator further into
- 6 the body vessel until the collapsible lumen reaches the desired position;
- 7 and
- 8 d. removing the dilator.

- 1 31. The method of claim 28 wherein the collapsible lumen has a proximal and
- 2 distal end, and wherein the distal end has a nozzle comprising a plurality of
- 3 openings disposed around the periphery of the collapsible lumen.

1 32. A method of manipulating a catheter within a longitudinal body vessel,
2 comprising:

- 3 a. inserting the catheter into the body vessel wherein the catheter
4 has a collapsible lumen having a proximal end and a distal end, and the
5 proximal end of the collapsible lumen is coupled to a support member,
6 wherein the distal end of the collapsible lumen is coupled to a tube
7 member, and wherein a sheath is disposed around the collapsible lumen;
8 b. positioning the collapsible lumen within a body vessel; and
9 c. removing the sheath by pulling the sheath longitudinally back over
10 the collapsible lumen.

1 33. The method of claim 32 wherein the distal end of the collapsible lumen
2 has a nozzle comprising a plurality of openings disposed around the periphery
3 of the collapsible lumen.

1 34. A catheter comprising:

2 a catheter body means, wherein the catheter body is elongated and
3 hollow, and

4 at least one collapsible lumen means having a proximal and distal end,
5 wherein the proximal end is coupled to the catheter body.

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